

# Office for Nuclear Regulation

An agency of HSE

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Our Ref: 2011/606826  
Unique No: EPR70390N

Your Ref:  
Unique No:

14 December 2011

*Dear Dominique & Alexis*

## **New nuclear power stations: Generic Design Assessment**

### **Interim Design Acceptance Confirmation for the UK EPR™ Reactor**

The Office for Nuclear Regulation (ONR) – an agency of the Health and Safety Executive (HSE) – has undertaken a Generic Design Assessment (GDA) of the Electricité de France SA and AREVA NP SAS (EDF and AREVA) UK EPR™ nuclear reactor during the period July 2007 to December 2011 in accordance with the process identified in the documents *New nuclear power stations: Generic Design Assessment: Guidance to Requesting Parties*<sup>1</sup>, *Office of Civil Nuclear Security Guidance document for Generic Design Assessment activities*<sup>2</sup>, and *Guidance on the Management of GDA Outcomes*.<sup>3</sup>

The findings of the ONR(HSE) assessment are summarised in the Step 4 Report for the UK EPR nuclear reactor entitled *New nuclear reactors: Generic Design Assessment. Electricité de France SA and AREVA NP SAS UK EPR™ nuclear reactor. Summary of the detailed design assessment of the Electricité de France SA and AREVA NP SAS UK EPR™ nuclear reactor (Step 4 of the Generic Design Assessment process) 14 December 2011* and which has been published on the ONR(HSE) website [www.hse.gov.uk/newreactors](http://www.hse.gov.uk/newreactors).

There remain issues relating to the safety of the design which must be resolved before ONR(HSE) could consider granting a Final Design Acceptance Confirmation (Final DAC). On the basis of the resolution plans that you, EDF and AREVA, have submitted, ONR(HSE) believe that all of these remaining issues can be resolved. ONR(HSE) is therefore content to issue an Interim Design Acceptance Confirmation for the UK EPR™ nuclear reactor.

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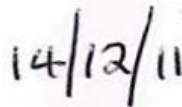
Redgrave Court Merton Road Bootle Merseyside L20 7HS  
Tel: 0151 951 4000 [www.hse.gov.uk/nuclear](http://www.hse.gov.uk/nuclear)

The Interim Design Acceptance Confirmation (ONR-GDA-iDAC-11-001 Issue 1) is attached and remains valid for a period of ten years from the date of issue.

Any organisation wishing to build and operate a nuclear installation in Great Britain must obtain from ONR(HSE) a site-specific Nuclear Site Licence, and any necessary Consents for construction of that installation granted under the Conditions attached to that Licence. It is ONR(HSE)'s current intent that it will not grant Consent for nuclear island safety-related construction for a power station based on the UK EPR™ reactor generic design before the unresolved GDA Issues identified in Annex 2 to the attached Interim Design Acceptance Confirmation have been addressed to the satisfaction of ONR(HSE) and a Final Design Acceptance Confirmation has been provided. The issuing of a Final Design Acceptance Confirmation would signal the end of GDA for that generic design of the UK EPR™ reactor.

**Signed**

**Dated**



**Kevin Allars**

*Director for Nuclear New Build  
Office for Nuclear Regulation  
An agency of the Health and Safety Executive*

## References

- 1 *Nuclear power station generic design assessment – guidance to requesting parties* Version 3 HSE August 2008 [www.hse.gov.uk/newreactors/ngn03.pdf](http://www.hse.gov.uk/newreactors/ngn03.pdf)
- 2 *Guidance document for generic design assessment activities* (Version 2) Office for Civil Nuclear Security 201206 January 2007 [www.hse.gov.uk/nuclear/ocns/ocnsdesign.pdf](http://www.hse.gov.uk/nuclear/ocns/ocnsdesign.pdf)
- 3 *New nuclear power stations. Generic Design Assessment. Guidance on the management of GDA outcomes* Version 1 HSE June 2010 [www.hse.gov.uk/newreactors/reports/management-gda-outcomes.pdf](http://www.hse.gov.uk/newreactors/reports/management-gda-outcomes.pdf)

**GENERIC DESIGN ASSESSMENT OF EDF AND AREVA UK EPR™ NUCLEAR REACTOR**  
**INTERIM DESIGN ACCEPTANCE CONFIRMATION**  
**FOR THE EDF AND AREVA UK EPR™ NUCLEAR REACTOR**

The Office for Nuclear Regulation (ONR), an agency of the Health and Safety Executive (HSE), in accordance with the document *Guidance on the Management of GDA Outcomes Version 1, 23 June 2010*, hereby gives Electricité de France SA and AREVA NP SAS (EDF and AREVA) an Interim Design Acceptance Confirmation (iDAC) for the UK EPR™ nuclear reactor.

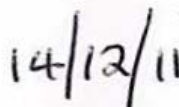
This iDAC is given following the assessment of the material included in the GDA Submission described in Annex 1.

The GDA Issues which must be resolved by EDF and AREVA in connection with the UK EPR™ nuclear reactor design before ONR(HSE) will consider issuing a Final Design Acceptance Confirmation (“unresolved GDA Issues”) are identified in Annex 2 of this iDAC.

This iDAC is valid for a period of ten years beginning on the date on which it is issued.

**Signed**

**Date of Issue**



**Kevin Allars**

*Director for Nuclear New Build*

*Office for Nuclear Regulation*

*An agency of the Health and Safety Executive*

**Annex 1 to the Interim Design Acceptance Confirmation  
for the UK EPR™ nuclear reactor  
GDA Submissions**

For the purposes of the iDAC, the generic design of the UK EPR™ reactor and the generic safety and security provisions are described in the following submissions:

- 1 *Reference Design Configuration*. Document UKEPR-I-002 Revision 10. May 2011. EDF and AREVA. (Other than the aspects identified in this document by EDF and AREVA, and agreed with ONR(HSE) as being outside the scope of GDA).
- 2 *UK EPR GDA Step 4 Consolidated Pre-construction Safety Report*. EDF and AREVA. March 2011. Detailed in EDF and AREVA letter UN REG EPR00997N of 18 November 2011.
- 3 The documents identified in the Submission Master List: *UK EPR GDA Submission Master List*. Document UKEPR-0018-001 Issue 01. 18 November 2011. EDF and AREVA.

## Annex 2 to the Interim Design Acceptance Confirmation for the UK EPR™ nuclear reactor

### GDA Issues

GDA Issue	GDA Issue Reference
<b>Internal Hazards</b>	
Dropped Loads and Impact	<a href="#">GI-UKEPR-IH-01 GDA Issue Revision 2</a>
Verification & Validation Studies	<a href="#">GI-UKEPR-IH-02 GDA Issue Revision 2</a>
Internal Flooding and Operator Actions	<a href="#">GI-UKEPR-IH-03 GDA Issue Revision 2</a>
Substantiation of Break Preclusion Claims for RCC-M Components	<a href="#">GI-UKEPR-IH-04 GDA Issue Revision 2</a>
<b>Civil Engineering</b>	
Hypothesis and Methodology Notes for Class 1 Structures	<a href="#">GI-UKEPR-CE-01 GDA Issue Revision 1</a>
Use of ETC-C for the Design and Construction of the UK EPR™	<a href="#">GI-UKEPR-CE-02 GDA Issue Revision 1</a>
Beyond Design Basis Behaviour of the Containment	<a href="#">GI-UKEPR-CE-03 GDA Issue Revision 1</a>
Containment Analysis	<a href="#">GI-UKEPR-CE-04 GDA Issue Revision 1</a>
Reliability of the ETC-C	<a href="#">GI-UKEPR-CE-05 GDA Issue Revision 1</a>
Seismic Analysis Methodology	<a href="#">GI-UKEPR-CE-06 GDA Issue Revision 1</a>
<b>Fault Studies</b>	
Heterogeneous Boron Dilution Faults	<a href="#">GI-UKEPR-FS-01 GDA Issue Revision 0</a>
Diversity for Frequent Faults	<a href="#">GI-UKEPR-FS-02 GDA Issue Revision 0</a>
Spent Fuel Pool Safety Case	<a href="#">GI-UKEPR-FS-03 GDA Issue Revision 2</a>
Steam Generator Tube Rupture Safety Case	<a href="#">GI-UKEPR-FS-04 GDA Issue Revision 1</a>
Design Basis Analysis of Essential Support Systems	<a href="#">GI-UKEPR-FS-05 GDA Issue Revision 0</a>
<b>Control &amp; Instrumentation</b>	
Design Information for Non-Computerised Safety System Required	<a href="#">GI-UKEPR-CI-01 GDA Issue Revision 2</a>
Protection System Independent Confidence Building Measures	<a href="#">GI-UKEPR-CI-02 GDA Issue Revision 2</a>
Claims, Arguments, Evidence Trail	<a href="#">GI-UKEPR-CI-03 GDA Issue Revision 2</a>
SMART Devices	<a href="#">GI-UKEPR-CI-04 GDA Issue Revision 1</a>
Obsolescence of SPPA T2000 Platform	<a href="#">GI-UKEPR-CI-05 GDA Issue Revision 2</a>
Absence of Adequate C&I Architecture	<a href="#">GI-UKEPR-CI-06 GDA Issue Revision 3</a>
<b>Essential Electrical Systems</b>	
PCSR Presentation of Claims Arguments and Evidence	<a href="#">GI-UKEPR-EE-01 GDA Issue Revision 1</a>

**Annex 2 to the Interim Design Acceptance Confirmation  
for the UK EPR™ nuclear reactor**

**GDA Issues**

GDA Issue	GDA Issue Reference
<b>Reactor Chemistry</b>	
Combustible Gas Mitigation	<a href="#">GI-UKEPR-RC-01 GDA Issue Revision 1</a>
Control and Minimisation of Ex-Core Radiation	<a href="#">GI-UKEPR-RC-02 GDA Issue Revision 0</a>
<b>Structural Integrity</b>	
Avoidance of Fracture	<a href="#">GI-UKEPR-SI-01 GDA Issue Revision 2</a>
Structural Integrity - RPV Surveillance Scheme	<a href="#">GI-UKEPR-SI-02 GDA Issue Revision 1</a>
<b>Radiation Protection</b>	
Radiological Zoning and Bulk Shielding	<a href="#">GI-UKEPR-RP-01 GDA Issue Revision 0</a>
<b>Human Factors</b>	
Inadequate Substantiation of Human Based Safety Claims	<a href="#">GI-UKEPR-HF-01 GDA Issue Revision 0</a>
<b>Cross-cutting Topics</b>	
Categorisation and Classification of Systems Structures & Components	<a href="#">GI-UKEPR-CC-01 GDA Issue Revision 1</a>
Consolidated Final GDA Submission	<a href="#">GI-UKEPR-CC-02 GDA Issue Revision 3</a>
Consider and Action Plans to Address the Lessons Learnt from the Fukushima Event	<a href="#">GI-UKEPR-CC-03 GDA Issue Revision 3</a>